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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/577,322  | 12/29/2006  | Masanori Ando        | 060344              | 4957             |
| 23850 7590 08/15/2008<br>KRATZ, QUINTOS & HANSON, LLP<br>1420 K Street, N.W.<br>Suite 400<br>WASHINGTON, DC 20005 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| KOSLOW, CAROL M   |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 1793  |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/577,322

**Applicant(s)**

ANDO ET AL.

**Examiner**

C. Melissa Koslow

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-08)
- Paper No(s)/Mail Date 4/28/06, 8/17/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

The article cited in the information disclosure statement of 17 August 2006 has been considered with respect to the provided partial translation. The references cited in the information disclosure statement of 28 April 2006 have been considered with respect to the provided English abstracts.

The disclosure is objected to because of the following informalities:

All occurrences of "alkali-earth" should be rewritten as "alkaline-earth".

Appropriate correction is required.

Claims 4, 6, 10 and 23 are objected to because of the following informalities:

All occurrences of "alkali-earth" should be rewritten as "alkaline-earth". Appropriate correction is required.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 14-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

U.S. patents 7,016,094 raises the question of enablement with respect to the claimed element of claims 1 and 14-24, when the material has the general formula  $\text{RMnO}_3$ , where R is at least one rare earth element. This reference teaches elements having the same structure as that claimed do not exhibit electroluminescence in column 5, lines 30-36. Thus it appears a third of the claimed embodiments are not functional and

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thus are not enabled. Furthermore, U.S. patent application publication 2006/0261329 teaches and electroluminescent device and it teaches materials having the general formula  $\text{RMnO}_3$ , where R is at least one rare earth element are electrodes, and are not luminescent. Thus it appears a third of the claimed embodiments are not functional and thus are not enabled. Finally, page 3, lines 22-24 teach that undoped  $\text{YAlO}_3$ , which is composition of claim 1, is not electroluminescent, which raises the question if all materials having the general formula  $\text{RAIO}_3$ , where R is a rare earth element is electroluminescent since all these aluminate have similar electrical properties.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 3,226,183.

This reference teaches rare earth manganites having the formula  $\text{RMnO}_3$ . This compound is identical to that claimed and therefore it must inherently be electroluminescent.

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Claims 1, 4-9, 12, 13 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 3,974,108.

This reference teaches lanthanum chromates having the formula  $(La_{1-x}A_x)CrO_3$ , where A is Sr, Ca or Mg and x is 0-0.3. This compound is identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 8, 9, 12 and 13, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 2, 4-6, 8-10, 12, 13 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,057,492.

This reference teaches  $La_2CuO_4$  and  $La_{1.9}A_{0.1}CuO_4$ , where A is Ba or Sr. These compounds are identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 8, 9, 12 and 13, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 3, 5 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,851,507, 5,096,880 or 5,106,828.

All three of these references teach  $Yb_{2.2}Cu_3O_6$ . This compound is identical to that claimed and therefore it must inherently be electroluminescent.

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Claims 2, 4-6, 8-10, 12, 13 and 26 are rejected under 35 U.S.C. 102(a) as being anticipated by the article by Kim et al.

This reference teaches  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ , where x is 0.063, 0.07 and 0.09, or 6.3 mol%, 7 mol% and 9 mol%, based on Cu.. These compounds are identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 8, 9, 12 and 13, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 1, 4-9, 12, 13 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 7,016,094.

This reference teaches  $\text{Re}_{0.7}\text{Ae}_{0.3}\text{MnO}_3$ , where Re is La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb and Lu and Ae is Mg, Ca, Sr and Ba. These compounds are identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 8, 9, 12 and 13, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 1, 4-6, 8-10, 12, 13 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 3,550,033 or JP 07-286171.

Both of these references teach chromium doped rare earth aluminates. U.S. patent 3,550,033 teaches chromium doped rare earth aluminates having the formula  $(\text{Gd}_{1-x}$

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$\text{Cr}_x\text{AlO}_3$ , where  $x$  is 0.0001-0.1 or 0.01-10 mol% based on Al. The translation for JP 07-286171 teaches chromium doped rare earth aluminates having the formula  $(\text{A}_{1-x}\text{Cr}_x)\text{AlO}_3$ , where A is Y, La or Gd and  $x$  is 0.0005-0.008, or 0.05-0.8 mol%, based on Al. These compounds are identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 6, 8, 10 and 12, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 1, 4-6, 8-10, 12 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 3,725,811.

This reference teaches chromium doped  $\text{LaAlO}_3$  and  $\text{GdAlO}_3$ . These compounds are identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 6, 8, 10 and 12, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 1, 4-6, 8-10, 12 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 3,956,170.

This reference teaches an transition group metal doped  $\text{YAlO}_3$  and chromium doped  $\text{MAlO}_3$ , where M is Eu, Tb and Yb. The transition group metal is one having a atomic number in the range 21-30 and includes titanium, vanadium, chromium,

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manganese, iron, cobalt, nickel, copper and zinc. These compounds are identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 6, 8, 10 and 12, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 1, 4-6, 8-10, 12, 13 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 4,988,402.

This reference teaches titanium doped  $\text{YAlO}_3$ , where the amount of titanium is 0.02-1 mol%, based on Al. This compound is identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 6, 8, 10 and 12, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

Claims 1, 4-9, 12 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002-129154.

The translation for this reference teaches titanium doped  $\text{LaAlO}_3$  and Group IIA doped rare earth aluminate having the formula  $\text{RAIO}_3$ . These compounds are identical to that claimed and therefore it must inherently be electroluminescent. With respect to claims 8 and 12, these claims only further define the alkali metal and transition metal component of the Markush group of claim 4. The claims do not require the oxide to



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contain an alkali metal or a transition metal dopant, as does claim 7. Thus if any aspects of claim 4 is taught by the reference, all the further defining claims are also taught.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 3,974,108.

This reference teaches lanthanum chromates having the formula  $(La_{1-x}A_x)CrO_3$ , where A is Sr, Ca or Mg and x is 0-0.3, or 0-30 mol%, based on Cr. The amount of A overlaps the claimed amount. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. This compound is identical to that claimed when x is 0 or 0.001-0.1 and therefore it must inherently be electroluminescent when x is in these ranges..

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the article by Kim et al.

This reference teaches  $La_{2-x}Sr_xCuO_4$ , where x is 0.063-0.11, or 6.3-11 mol% based on Cu.. The amount of Sr overlaps the claimed amount. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549

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(CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. This compound is identical to that claimed when x is 0.001-0.1 and therefore it must inherently be electroluminescent when x is in these ranges..

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-129154.

As stated above, the translation for this reference teaches and Group IIA doped rare earth aluminate having the formula  $RAIO_3$ . The amount of Group IIA dopant is 10 mol%, based on Al, or less. This amount encompasses that claimed. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. This compound is identical to that claimed when x is 0.001-0.1 and therefore it must inherently be electroluminescent when x is in these ranges..

Claims 1, 4, 5, 9, 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 3,725,811.

As discussed above, this reference teaches chromium doped  $LaAlO_3$  and  $GdAlO_3$ . The amount of chromium 0.0005-1 wt%, based on the amount of aluminum. This amount overlaps the claimed amount. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP

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2144.05. This compound is identical to that claimed when x is 0.001-0.1 and therefore it must inherently be electroluminescent when x is in these ranges.

Claims 1, 4, 5, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 3,956,170.

This reference teaches vanadium doped  $\text{YAlO}_3$  and the amount of the dopant is greater than 0 up to 10 wt%. This amount overlaps the claimed amount. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. This compound is identical to that claimed when x is 0.001-0.1 and therefore it must inherently be electroluminescent when x is in these ranges.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/  
August 15, 2008

/C. Melissa Koslow/  
Primary Examiner  
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